

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND**

LEADING TECHNOLOGY COMPOSITES,
INC,

v.

MV2, LLC.

Civil Action No. CCB-19-1256

MEMORANDUM

Now pending before the court are cross-motions for summary judgment. Leading Technology Composites, Inc. (“LTC”) seeks a judgment that MV2, LLC (“MV2”) infringed its patent, U.S. Patent Number 8,551,598 (the “‘598 patent”), did so willfully, and that LTC did not misuse its patent. MV2 asks the court to hold that it did not infringe the ‘598 patent. Also pending are the parties’ motions to exclude each other’s expert witness and MV2’s motion to amend its answer. The motions are fully briefed and no oral argument is necessary. *See* Local Rule 105.6. For the following reasons, the court will grant MV2’s cross-motion for summary judgment and deny LTC’s motion. The exclusion and amendment motions will be denied as moot.

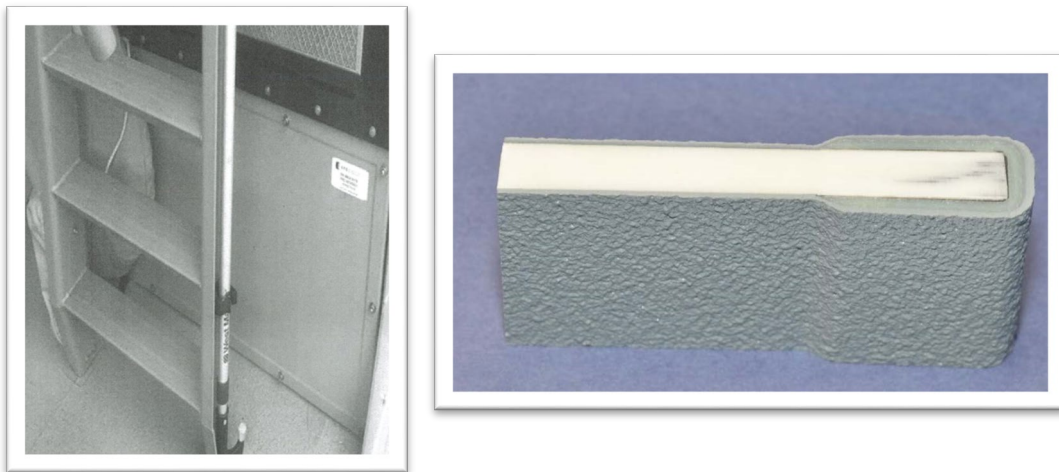
BACKGROUND

I. History

LTC is in the business of manufacturing armoring panels for sale to governmental and private customers in need of ballistic protection. LTC Mot. at 1, ECF 281. The ‘598 patent concerns an “armoring panel for resisting edge impact penetrations by ballistic projectiles.” LTC Mot. Ex 2 at 4, ECF 281-2.¹ The patent’s inventors—Michael Coltrane, Bo McGown, and John Bockbrader—were employees of LTC and assigned their patent rights to LTC after submitting the

¹ Pincites for documents without consistent pagination refer to their ECF-generated numbering.

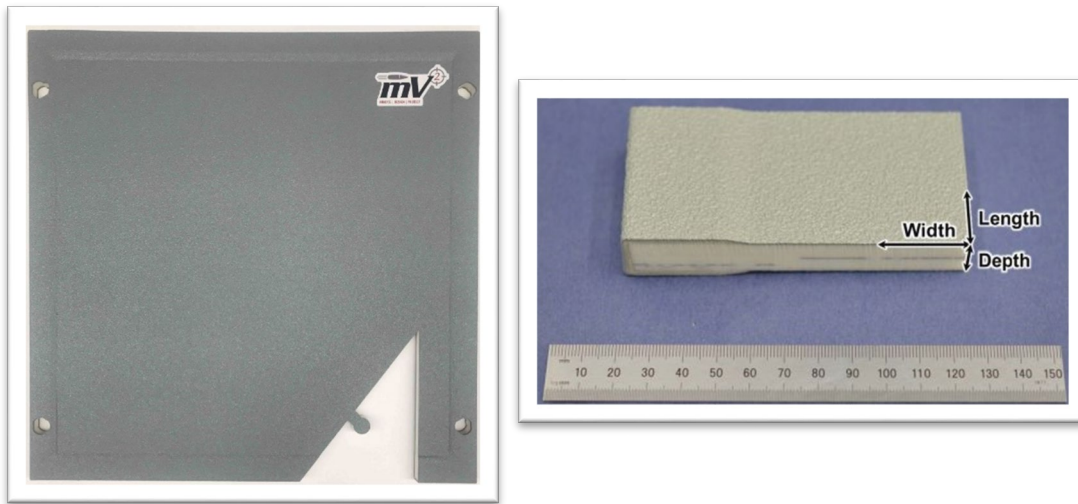
application to the U.S. Patent and Trademark Office (“PTO”). *Id.* The patent was awarded on October 8, 2013, and included seven claims describing the structure of the inventive panel. *Id.*; *id.* at col. 5, l. 39-col. 6, l. 48. In broad terms, the patent covers armoring panels with a specific structure on the edge. MV2 contends that other, non-infringing “edge trim” systems were used in the industry both before and after LTC acquired the ‘598 patent. Accordingly, LTC’s patented structure will be referred to with reference to the patent or LTC, and references to edge protection/trim generally do not necessarily refer to LTC’s patented technology. LTC’s panels look like this:²



MV2 also designs and develops armoring panels, and it competes with LTC in the industry. In 2018 and 2019, MV2 entered into several agreements to provide armoring panels with edge trim for two companies, Metal Shark and Vigor, as part of contracts that those companies won to produce boats for branches of the U.S. military. Section 1498 Immunity Mem. at 1-5, ECF 233. MV2 displayed an extra sample panel (referred to as a test coupon) from one of the agreements at a boat show. *Id.* at 4. MV2 also agreed to produce armoring panels with edge trim for a private

² The left image is an LTC panel mounted on a boat. LTC Mot. Ex. 49, ECF 281-49. The right is a cross-section of an LTC panel. Mot. to Exclude Dr. Adam Cardi Ex. A at 74 (Diagram 35), ECF 278-3 (“Cardi Report”).

company, Freeport McMoran, in November 2017, and shipped seventeen panels in late January 2018. MV2 Mot. Ex. 10 ¶¶ 5-7, ECF 293-11; *id.* Exs. 10-1, 10-4. MV2's panels look like this:³



LTC took issue with MV2's panels and filed this infringement action on April 29, 2019. Compl., ECF 1. Since then, the court has narrowed the legal and factual scope of the case. Among other things, the court held that the doctrine of assignor estoppel barred MV2 from arguing that the '598 patent is invalid. Assignor Estoppel Mem., ECF 103. And the court later concluded that MV2 was immune to infringement claims for the armoring panels it sold to Metal Shark and Vigor under 28 U.S.C. § 1498. Section 1498 Immunity Mem. The court also construed the claims of the '598 patent, further refining the scope of the issues. Claim Construction Mem., ECF 105.

While this case progressed, MV2 filed an *ex parte* request for the PTO to reexamine the '598 patent, pursuant to 35 U.S.C. § 302, on June 13, 2019. Stay Mem. at 1, ECF 235. The PTO ordered reexamination on July 9, 2019, and on March 13, 2020, issued a First Office Action rejecting the claims of the '598 patent as anticipated by/unpatentable over prior patents. *Id.* at 2. After LTC responded, the PTO issued a Second Office Action again rejecting all of the '598 patent's claims. *Id.* At that point, the court stayed this case pending the PTO's final decision. *Id.*

³ The left image is an MV2 panel with a wedge removed for testing. LTC Mot. Ex. 5 at 5, ECF 281-5. The right is a cross-section of an MV2 panel. Cardi Report at 28 (Diagram 7).

at 12. On July 26, 2021, the PTO issued a reexamination certificate canceling claims 1-6 but affirming the validity of an amended claim 7 that incorporated the features of the canceled claims. Mootness Mem. at 2, ECF 274. MV2 thereafter moved to dismiss the entire action as moot because of the changes to the ‘598 patent’s claims during reexamination and the court denied that motion, reasoning that the amended claim was “substantially identical” to the original claims. *Id.* at 11.

So the present motions, which had been filed once before, came before the court again. LTC argues that the remaining seventeen MV2 panels infringe amended claim 7 of the ‘598 patent, and MV2 argues that its panels do not infringe.

II. Patent Claims

Amended claim 7 of the reexamined ‘598 patent incorporates the features of original claims 1-6. Mootness Mem. at 2; *see* LTC Mot. Ex. 3, ECF 281-3. The language of the amended claim was further revised to match the court’s claim constructions. Mootness Mem. at 11. Amended claim 7 states:

7. An armoring panel for resisting edge impact penetrations by ballistic projectiles, the armoring panel comprising:
 - (a) a strata comprising an outer stratum, an inner stratum, and a plurality of intermediate stratus, each stratum among the plurality of intermediate stratus comprising ballistic fibers, having a lateral end, and having an oppositely lateral extension;
 - (b) at least a first durable sheet comprising outer and inner oppositely lateral extensions, the outer and inner oppositely lateral extensions having lateral ends, the at least first durable sheet further comprising a delamination resisting tie section having outer and inner ends and having an oppositely lateral surface, the delamination resisting tie section’s outer and inner ends being respectively formed wholly with the outer and inner oppositely lateral extension’s lateral ends, and the delamination resisting tie section spanning between the outer and inner oppositely lateral extensions’ lateral ends so that the delamination resisting tie section’s oppositely lateral surface directly laterally overlies the intermediate stratus’ lateral ends, the outer stratum comprising the at least first durable sheet’s outer

oppositely lateral extension, and the inner stratum comprising the at least first durable sheet's inner oppositely lateral extension;

(c) a bonding matrix interconnecting the strata's stratums;

wherein each of the strata's stratums comprises a ballistic fiber material selected from the group consisting of polyaramid fibers, extended chain polyethylene fibers, ultra-high molecular weight polyethylene fibers, nylon fibers, graphite fibers, semi-crystalline polystyrene fibers, alumino-boro-silicate glass fibers, and magnesia-alumina-silicate fibers;

wherein the bonding matrix comprises an adhesive or bonding resin material selected from the group consisting of phenolic resin, polyester resin, rubber compound resins, silicone resin, thermoplastic resins, polyepoxide, malamine, polyamides, polyvinyl butol, and polyolefins;

wherein the strata further comprises a plurality of second durable sheets, each sheet among the plurality of second durable sheets comprising an outer oppositely lateral extension, an inner oppositely lateral extension, and a delamination resisting tie section spanning between lateral ends of said each sheet's outer and inner oppositely lateral extensions, each sheet among the plurality of second durable sheets overlying the at least first durable sheet;

wherein each oppositely lateral extension has a length, the lengths of the durable sheets' outer and inner oppositely lateral extensions being less than the lengths of the intermediate stratums' oppositely lateral extensions;

wherein the lengths of the durable sheets' outer and inner oppositely lateral extensions are at least one inch; and

further comprising outer and inner materials saving voids, said voids respectively extending oppositely laterally from lateral ends of the durable sheets' outer and inner oppositely lateral extensions.

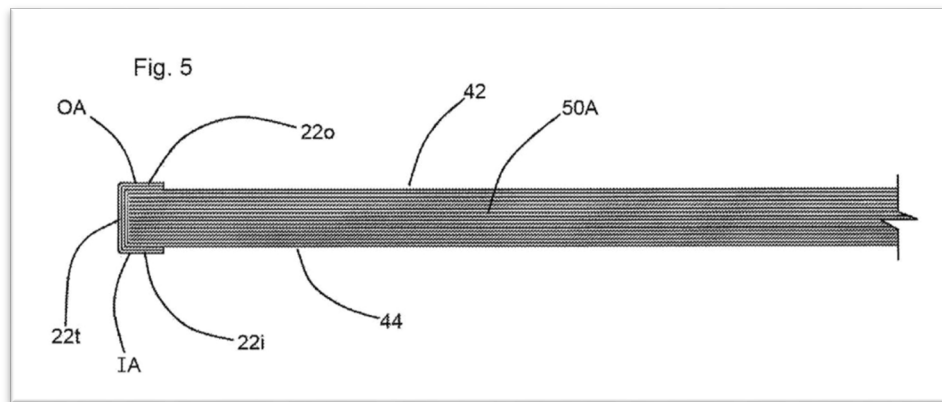
LTC Mot. Ex. 3 at col. 1, l. 21-col. 2, l. 14. The court construed the term "first durable sheet" from sub-paragraph 7(b) to mean "a ballistic fiber sheet component, composed of material including those referenced in the patent, (for example, glass fibers), for resisting edge impact penetrations by ballistic projectiles." Claim Construction Mem. at 6. The court's other constructions corrected errors in the patent and were incorporated in the amended language. *Id.* at 9-11.

In somewhat simpler terms, the ‘598 patent describes a structure designed to solve a drawback with known armoring panel designs. *See* LTC Mot. Ex. 2 at col. 1, ll. 23-33. Prior art armoring panels consisting of a bonded stack of stratum of ballistic fibers were effective at resisting rifle-fired-bullet strikes at the panel’s medial section but strikes near the lateral edge tended to cause “delamination,” or the tearing apart of one stratum from the next. *Id.* at col. 1 ll. 26-30. “Such delaminations . . . undesirably markedly reduce the panel’s ability to suppress and prevent penetration by the bullet.” *Id.* at col. 1, ll. 31-33.

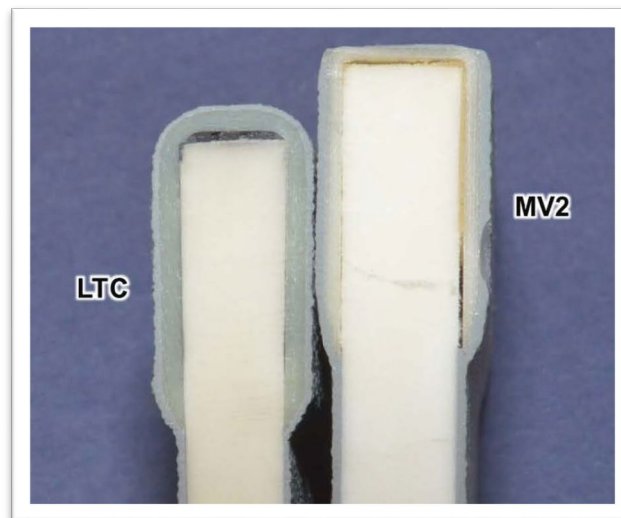
To prevent delamination, the ‘598 patent teaches affixing an “at least first durable sheet” consisting of “outer and inner lateral extensions,” which run parallel to the panel’s stratum, and a “delamination resisting tie section,” which runs perpendicular to the panel’s stratum and the durable sheet’s outer and inner lateral extensions, to the panel’s edge. LTC Mot. Ex. 3 at col. 1, ll. 29-42. The at least first durable sheet’s outer and inner lateral extensions are “compris[ed]” of the panel’s outer and inner stratum. *Id.* at col. 1, ll. 42-46. The durable sheet thus functions as a kind of cap or covering on the ends of the panel. Moreover, because the at least first durable sheet consists of both the outer and inner lateral extensions connected by the delamination resisting tie section, “the portions of [the] outermost/innermost stratum which span across and overlie the panel’s lateral edge surfaces [i.e. the delamination resisting tie section] advantageously function as suspension ties which directly resist and cancel delaminating forces.” LTC Mot. Ex. 2 col. 1, ll. 44-49.

An additional “plurality of second durable sheets” with the same structure as the at least first durable sheet are then added to “overl[ie] the at least first durable sheet.” LTC Mot. Ex. 3 at col. 1, l. 61-col. 2, l. 3. The lengths of the outer and inner lateral extensions of the second durable sheets are “less than the lengths of the intermediate stratum’s oppositely lateral extensions,” but

“are at least one inch.” *Id.* at col. 2, ll. 3-10. Thus, the outer and inner medial portions of the panel “compris[e] outer and inner materials saving voids” where the overlying durable sheets’ outer and inner lateral extensions have stopped, but the underlying intermediate stratum’s oppositely lateral extensions continue. *Id.* at col. 2, ll. 11-14. A cross-section of LTC’s inventive panel is illustrated here with labels that are not described because they correspond to the claims as written before construction and amendment:⁴



For comparison, cross sections of the LTC and MV2 panels look like this:⁵



Because the relevance of additional facts depends on the legal issues, the court integrates them into its analysis without developing them here.

⁴ LTC Mot. Ex. 2 at 9.

⁵ Cardi Report at 75 (Diagram 36).

LEGAL STANDARD

Under Federal Rule of Civil Procedure 56(a), summary judgment will be granted “if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). “A dispute is genuine if ‘a reasonable jury could return a verdict for the nonmoving party.’” *Libertarian Party of Va. v. Judd*, 718 F.3d 308, 313 (4th Cir. 2013) (quoting *Dulaney v. Packaging Corp. of Am.*, 673 F.3d 323, 330 (4th Cir. 2012)). “A fact is material if it ‘might affect the outcome of the suit under the governing law.’” *Id.* (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)). Accordingly, “the mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment.” *Anderson*, 477 U.S. at 247-48.

The court must view the evidence in the light most favorable to the nonmoving party, *Tolan v. Cotton*, 572 U.S. 650, 656-67 (2014), and draw all reasonable inferences in that party’s favor, *Scott v. Harris*, 550 U.S. 372, 378 (2007). “When faced with cross-motions for summary judgment, the court must review each motion separately on its own merits ‘to determine whether either of the parties deserves judgment as a matter of law,’” and “must take care to ‘resolve all factual disputes and any competing, rational inferences in the light most favorable’ to the party opposing that motion.” *Rossignol v. Voorhaar*, 316 F.3d 516, 523 (4th Cir. 2003) (quoting *Philip Morris Inc. v. Harshbarger*, 122 F.3d 58, 62 n.4 (1st Cir. 1997) and *Wightman v. Springfield Terminal Ry. Co.*, 100 F.3d 228, 230 (1st Cir. 1996)). Generally, “when there is a close question and ‘reasonable minds could differ’ when weighing the facts against the law, then summary judgment is inappropriate.” *Walker v. Mod-U-Kraf Homes, LLC*, 775 F.3d 202, 208 (4th Cir. 2014) (quoting *Paroline v. Unisys Corp.*, 879 F.2d 100, 105 (4th Cir. 1989)).

ANALYSIS

I. Infringement

“Whether an accused device infringes requires a two-step analysis—the court first determines the scope and meaning of the patent claims asserted, and then the properly construed claims are compared to the allegedly infringing device.” *Sound View Innovations, LLC v. Hulu, LLC*, 33 F.4th 1326, 1335 (Fed. Cir. 2022) (quoting *CommScope Techs. LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1295 (Fed. Cir. 2021)). The first step, claim construction, is determined as a question of law, generally following a hearing, *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976-79 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996), and the comparison between the claims and the device is a question of fact resolved on summary judgment (or at trial), *see Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1273 (Fed. Cir. 2004) (citing *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998)).

This case initially proceeded accordingly, and the court issued a Memorandum and Order construing the ‘598 patent’s claims on February 18, 2020. Claim Construction Mem.; Claim Construction Order, ECF 106. Since then, however, the path of litigation has been less than direct. The issues and claims have been successively refined through rounds of briefing on estoppel and immunity and a patent re-examination, and LTC’s infringement claim now largely depends on the work done by the phrase “for resisting edge impact penetrations” in the ‘598 patent’s preamble.

LTC argues that this phrase is not a limiting part of the preamble or that, if it is, it should be read broadly. A ruling in its favor on either point would, according to LTC, compel a conclusion that MV2’s panels literally infringe the ‘598 patent. MV2 counters that the entire preamble, including the “resisting” phrase, is limiting, and that “resisting” must be understood to have a technical, measurable meaning. If MV2’s view is right, it explains, LTC has not proved literal

infringement because it has offered no evidence to quantify the “resistance” capabilities of MV2’s panel. The preamble states: “An armoring panel for resisting edge impact penetrations by ballistic projectiles, the armoring panel comprising” LTC Mot. Ex. 3 at col. 1, ll. 21-23.

A. Limitation

At the claim construction phase, the court noted that “both parties agree that the preamble is a limitation on the claim.” Claim Construction Mem. at 3. LTC now argues that it only agreed that “the structural aspect,” i.e., “[a]n armoring panel,” “of the preamble was limiting.” LTC Mot. at 20. LTC contends that the “for resisting edge impact penetrations by ballistic projectiles” phrase of the preamble is general “language stating a purpose or intended use,” which usually does not limit the patent’s claims. *Id.* (quoting *TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1324 (Fed. Cir. 2015)).⁶

LTC’s agreement was not so circumscribed when it was arguing claim construction. In its opening *Markman* brief, LTC explained that “[b]oth parties agree that the preamble is a limitation; namely, that claim 1 is not directed to a ceiling panel, flooring panel, or panel for providing protection from the sun. Rather, as is consistent with the whole of the specification, claim 1 is directed to an armoring panel that resists edge-impact penetrations by ballistic projectiles, and in this way, gives meaning to the claim.” LTC Claim Construction Memo. at 8, ECF 62.⁷ LTC then went on to elaborate that “[t]he preamble straightforwardly explains the type of armor panel be

⁶ The court agrees that “[a] conclusion that some preamble language is limiting does not imply that other preamble language, or the entire preamble, is limiting.” *Cochlear Bone Anchored Sols. AB v. Oticon Med. AB*, 958 F.3d 1348, 1355 (Fed. Cir. 2020) (citing *TomTom*, 790 F.3d at 1322-23).

⁷ It seems apparent that merely describing the subject matter of the claim as an “armoring panel” would be sufficient to distinguish it from a “ceiling panel, flooring panel, or panel for providing protection from the sun.” LTC Claim Construction Memo. at 8 (emphasis added). The “resisting” phrase need only be included if it carries some independent significance for defining the invention. LTC appears to have realized this at the *Markman* hearing. See LTC Mot. Ex. 30 at 27:4-7, ECF 281-30.

[sic] claimed: one that resists edge-impact penetrations by ballistic projectiles. This is consistent with the specification.” *Id.* at 9. LTC’s brief illustrated its point by listing eight instances where the specification described the instant armoring panel as “resisting edge impact penetrations,” adding emphasis to the “resisting” phrase each time. *Id.* at 9-10. In its responsive brief, LTC argued that “the preamble does not render claim 1 indefinite because ordinary skilled artisans would readily understand, in the context of the patent, that ‘an armoring panel for resisting edge impact penetrations by ballistic projectiles’ refers to an armor panel that helps resist edge-impact penetrations by ballistic projectiles.” LTC Claim Construction Response at 4, ECF 76. And finally, LTC explained that “a potential infringer knows with certainty that it will infringe the ’598 patent if it makes an armor panel that resists edge-impact ballistic penetrations, namely, by including all of the recited claim limitations.” *Id.* at 7. This briefing does not restrict LTC’s agreement on the preamble limitation to the “armoring panel” phrase. If anything, it appears that LTC was *primarily* focused on the limitations imposed by the “resisting edge impact penetrations” phrase, as is illustrated by its inclusion of that phrase in every description of the preamble’s limiting effect, identification of that phrase as describing the specific type of armoring panel at issue, and repeated emphasis of that phrase specifically.

LTC points to several instances during the *Markman* hearing where it argued that the preamble went to the “purpose” of the ’598 patent’s claims. LTC Mot. at 20-21. MV2 did not understand the parties’ agreement that way, *see* LTC Mot. Ex. 30 at 29:13-16 (“Mr. Camacho goes back to the discussion of, well, we’re just trying to define the purpose of these claims. But they asked. We agreed that it be construed as a positive limitation on the claims.”), and LTC’s position in oral argument does not appear to match with its pre-argument briefing posture. Nor was LTC’s position entirely consistent at the hearing, as will be shown shortly.

To the extent that LTC’s claim-construction position regarding the preamble is disputable, a look at the rest of the court’s constructions resolves the issue in MV2’s favor. After addressing the preamble and several terms of the ‘598 patent’s first claim (now terms in Claim 7(a)), the court addressed the parties’ dispute over the construction of the term “first durable sheet.” Claim Construction Mem. at 5-6. LTC argued that “first durable sheet” should be construed to mean “a rigid sheet *that suppresses projectile penetrations from bullets that impact at or near the panel’s edge.*” LTC Claim Construction Memo. at 17 (emphasis added). LTC drew this language from the specification and argued that it was necessary in the context of distinguishing its invention from prior art (Patent No. 5,545,455). *Id.* at 18. At the *Markman* hearing, LTC specifically explained that excluding the suppression phrase would be “problematic because if that’s the case, what it could stand to do is envelop prior art that’s really not durable. That’s not intended to reduce or suppress projectile penetrations.” LTC Mot. Ex. 30 at 16:12-15. On LTC’s reading, the specification’s purposive description was a “straightforward explanation of what the durable sheet is” from “the best place to . . . find the definition of terms or how they should be construed.” *Id.* at 16:3-9. The court accepted LTC’s proposed construction but, recognizing that it was substantively identical to the preamble, “change[d] LTC’s proposed construction so it matches the preamble of claim 1.” Claim Construction Mem. at 6. Thus, the court ultimately construed “first durable sheet” to mean “a ballistic fiber sheet component, composed of material including those referenced in the patent (for example, glass fibers), for resisting edge impact penetrations by ballistic projectiles.” *Id.* Considering LTC’s argument at claim construction, its current position that it “does not believe the Court intended to demark a separate limitation that must be proved to establish infringement” by including the resisting phrase, LTC Mot. at 12, is unconvincing.

Moreover, contrary to LTC's argument, precedent does not preclude the "resisting" element of the preamble from limiting the '598 patent's claims. It is true that "[g]enerally, the preamble does not limit the claims." *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002) (citing *DeGeorge v. Bernier*, 768 F.2d 1318, 1322 n.3 (Fed. Cir. 1985)). And this is particularly true "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997)). But there is no "binary distinction between statements of mere intended purpose on one hand and limiting preambles on the other." *Eli Lilly & Co. v. Teva Pharms. Int'l GmbH*, 8 F.4th 1331, 1340 (Fed. Cir. 2021) (citing *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006)).⁸

"No litmus test defines when a preamble limits claim scope," *Catalina Mktg.*, 289 F.3d at 808, and "the determination of whether preamble recitations are structural limitations or mere statements of purpose or use 'can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.'" *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997) (quoting *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989)). "The preamble may be construed as limiting 'if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim.'" *Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1358 (Fed. Cir. 2010) (quoting *Catalina Mktg.*, 289 F.3d at 808). And the preamble may be limiting

⁸ Furthermore, although LTC is correct that a preamble statement of intended purpose is more likely to be limiting in a method claim than an apparatus claim, "[e]ven with respect to apparatus or composition claims, [the Federal Circuit has], when warranted by the facts, found statements of intended purpose to be limiting." *Eli Lilly*, 8 F.4th at 1341.

when “the claims ‘depend on it for antecedent basis,’” *In re Fought*, 941 F.3d 1175, 1178 (Fed. Cir. 2019) (quoting *C.W. Zumbiel Co. v. Kappos*, 702 F.3d 1371, 1385 (Fed. Cir. 2012)), or “the claim drafter uses the preamble to define the subject matter of the claim,” *August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d 1278, 1284 (Fed. Cir. 2011) (citing *Allen Eng’g*, 299 F.3d at 1346). Furthermore, “clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention.” *Catalina Mktg.*, 289 F.3d at 808-09 (citing *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1375 (Fed. Cir. 2001)). Consideration of the full patent and the relevant prosecution history in light of these standards reveals three reasons that support the conclusion that the “resisting” phrase is correctly understood to be a limitation, and indeed that LTC intended it to be one.

First, the entire preamble “is essential to understand limitations or terms in the claim body.” *Catalina Mktg.*, 289 F.3d at 808 (citing *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1306 (Fed. Cir. 1999)). Specifically, the “resisting” phrase is critical to understanding the court’s construction of the term “first durable sheet” in the ‘598 patent’s claims. As explained, the court imported the entire preamble into its construction of “first durable sheet” as part of its approval of LTC’s proposed construction. *See supra* at 12. LTC specifically contended that “first durable sheet” must be construed to include some “suppress[ion]” or resistance limitation in order to give meaning to the word “durable.” LTC Claim Construction Memo. at 17-18 (“claim 1 claims and the specification describes” . . . “a ‘durable’ sheet that would suppresses [sic] projectile penetrations at a panel’s edge.”); *see* LTC Mot. Ex. 30 at 16:12-15. The court agreed with LTC’s argument that “first durable sheet” must be understood in the context of the preamble, and the preamble thus provides details about necessary structural features in the claims.

In *Eli Lilly*, the Federal Circuit found a similar preamble limiting, albeit in a method patent. There, the preamble stated: “A method for treating headache in an individual, comprising”⁹ 8 F.4th at 1335. Each of the independent claims then enumerated “a step of administering an ‘effective amount’ of an anti-CGRP antibody.” *Id.* at 1342. But the claims did not explain the meaning of an “effective amount,” and the court determined that “[t]he preambles provide the only metric by which one practicing the claim could determine whether the amount administered is an ‘effective amount’”; an amount effective to treat vasomotor symptoms such as a headache. *Id.*¹⁰ Here too, at LTC’s own insistence, the court has determined that the only metric by which one practicing the claim could determine the necessary durability of the first durable sheet is by reference to the preamble, which reveals that it must be sufficiently durable to “resist edge impact penetrations.” *See also Pacing Techs., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1023-26 (Fed. Cir. 2015) (holding that preamble stating “[a] repetitive motion pacing system for pacing a user” was limiting and required “the system . . . [to] be capable of producing a sensible tempo for pacing the user”).

Second, during the re-examination prosecution, the PTO understood LTC to contend that the “resisting” phrase of the preamble was limiting. *See Catalina Mktg.*, 289 F.3d at 808-09. In an Interview Summary, Examiner Jastrzab noted that “Mr. Camacho asserted that the language in the preamble of claim 1 of ‘resisting edge impact penetrations’ should be construed as an actual limitation.” LTC Mot. Ex. 25 at 3, ECF 281-25. LTC’s assertion was made in the context of

⁹ The patent at issue included several disputed preambles, but the court described the quoted preamble as “representative.” *Eli Lilly*, 8 F.4th at 1335.

¹⁰ Coincidentally, LTC offered argument at the *Markman* hearing that a hypothetical preamble regarding a “medicine that helps with a headache” would not be construed as limiting. *See* LTC Mot. Ex. 30 at 26:17-27:3. *Eli Lilly*, which was decided after the *Markman* hearing, contradicts that contention.

arguing that LTC's panel was not analogous to several prior art references at issue. *Id.* Although LTC contends that it instead was referring to the "armoring panel" phrase of the preamble, *see* LTC Mot. at 22, the PTO's complete omission of the "armoring panel" phrase from its understanding of the limitation belies LTC's suggestion.¹¹

LTC points out that, in a response to the PTO's First Office Action, it stated that it would *not* argue that the "resisting" phrase of the preamble "is a basis for withdrawing the rejections in view of or overcoming the art of record." LTC Reply Ex. 4 at 3, ECF 304-4. But a review of that document in full (submitted as an exhibit in prior briefing) reveals that LTC's promise was not strictly kept. Later in that same document, LTC distinguished the '598 patent from prior art (Leighton) by noting that "Leighton is not concerned with resisting edge impact penetrations from ballistic projectiles, which is one of the objects of the '598 patent." LTC Opp'n to Mot. to Dismiss as Moot Ex. 5 at 60, ECF 264-5 ("First Office Action Response"); *see id.* at 64 (explaining that "Leighton is not reasonably pertinent to the particular problem with which the '598 patent involves: resisting edge-impact penetrations by ballistic projectiles"); *id.* at 78. Although LTC did not contend that Leighton was distinguishable because it lacked a structural ability to resist edge impact penetrations (it instead used the different purposes to explain other structural differences), LTC clearly did not disclaim reliance on the "resisting" phrase as a means of distinguishing the '598 patent from prior art. LTC has exhibited a track record of offering its invention's functionality as a critical consideration in distinguishing it from prior art, both in this litigation and before the

¹¹ LTC points out that the Examiner responded to its proffered limitation by explaining that "if the references supplied the claimed structure then accordingly they were deemed to inherently be capable of performing any function asserted by the claimed invention." LTC Mot. at 22 (citing LTC Mot. Ex. 25 at 3). The Examiner was stating the law as it applied to the prior art references that seemed to anticipate LTC's invention, *see* LTC Mot. Ex. 25 at 3, and this general statement therefore does not support LTC under the present circumstances.

PTO. Under the circumstances, LTC has used the “resisting” functionality to “define, in part, the claimed invention,” *Catalina Mktg.*, 289 F.3d at 808-09, and it is appropriate to construe that function as a limitation on LTC’s claims, either from the preamble or the court’s inclusion of the preamble in its construction of “first durable sheet.”

Finally, a review of the patent’s specification suggests that the capability of “resisting edge impact penetrations” is critical to “what the inventors actually invented and intended to encompass by the claim.” *Rowe*, 112 F.3d at 478 (citing *Corning Glass*, 868 F.2d at 1257). The specification explains that “[l]aminate composites armoring panels which consist of layers or stratum of ballistic fibers are known,” but notes a “drawback or deficiency in the performance of such laminate composite armoring panels” when struck at or near the edge by a projectile such as a bullet. LTC Mot. Ex. 2 at col. 1, ll. 15-16, 23-33. The critical purpose of the invention, according to the specification, is to solve this drawback. *Id.* at col. 1, ll. 34-49. The “resisting” phrase is included in the invention’s title, *id.* at col. 1, ll. 1-3, the description of how it relates to the background of the field, *id.* at col. 1, ll. 34-35, and at the beginning of the invention’s summary, *id.* at col. 1, ll. 53-55, and its capacity to resist or suppress edge impact penetrations from ballistic projectiles is touted throughout, *see id.* at cols. 2-3. Although not conclusive, the specification’s unwavering adherence to the invention’s capacity to resist edge impact penetrations supports the conclusion that the invention’s benefits are what render it “patentably significant.” *Catalina Mktg.*, 289 F.3d at 809, 810; *see In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1347-48 (Fed. Cir. 2002) (reviewing specification of method patent and determining that repeated references to “[a] stated object of the invention” that was repeated in the preamble rendered it limiting as a means of “defin[ing] the claimed invention”); *Gen. Elec. Co. v. Nintendo Co., Ltd.*, 179 F.3d 1350, 1361-62 (Fed. Cir. 1999) (holding that preamble stating goal of invention was limiting when the

“specification makes clear that the inventors were working on the particular problem of displaying binary data on a raster scan display device and not general improvements to all display systems”).

An additional consideration further convinces the court that LTC intended the “resisting” functionality to be construed as limiting at the *Markman* stage of this litigation. When the parties were briefing claim construction, one of MV2’s primary affirmative defenses was that the ‘598 patent was invalid due to prior art. *See* Answer at 27-28, ECF 16. In countering MV2’s defense, LTC would have benefitted from a construction that the preamble was limiting because it would then have been able to argue that the “resisting edge impact penetrations” language distinguished the ‘598 patent from known armoring panels and other edge protection systems. *See Shoes by Firebug LLC v. Stride Rite Children’s Grp., LLC*, 962 F.3d 1362, 1367 (Fed. Cir. 2020) (“Whether a claim preamble is considered to be a limiting part of the claim matters, inter alia, because, if it is not, the scope of the claim is broader, but the claim is vulnerable to more potentially-invalidating prior art.”). The same day the court issued its claim construction Memorandum and Order, *see* Claim Construction Mem. (published February 18, 2020), it also held that MV2 was estopped from asserting an invalidity defense, *see* Assignor Estoppel Mem. (published February 18, 2020). Thus freed from the need to distinguish the ‘598 patent from prior art, LTC appears to have adopted a much broader view of the preamble to extend the reach of its claims heading into the infringement phase of this litigation. But a party “cannot have an expression be limiting in [the invalidity] context and non-limiting in [infringement].” *Bristol-Myers Squibb*, 246 F.3d at 1374. LTC agreed that the preamble, in its entirety, limited the claims of the ‘598 patent, either on its own or construed as part of the term “first durable sheet,” and construing the preamble as limiting is supported by precedent and the record. Accordingly, LTC must demonstrate that MV2’s panels “resist[] edge impact penetrations” to prove infringement.

B. Construction

At the claim construction stage, the court did not construe the preamble because LTC argued that the preamble did not require construction and MV2 focused on its position that the preamble was indefinite, an argument that the court held was barred by its assignor estoppel ruling. Claim Construction Mem. at 3. Now, the parties advance substantially different interpretations of the preamble. *See* LTC Mot. at 7-9 (defining “resisting edge impact penetrations” as encompassing the general resistance present in all armoring panels); MV2 Mot. at 9-15, ECF 293-1 (defining the preamble as meaning “preventing complete penetrations at the edge” and therefore requiring ballistic testing to prove). “When the parties raise an actual dispute regarding the proper scope of [patent] claims, the court . . . must resolve that dispute,” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008), and “a district court may (and sometimes must) revisit, alter, or supplement its claim constructions . . . to the extent necessary to ensure that final constructions serve their purpose of genuinely clarifying the scope of claims for the finder of fact,” *In re Papst Licensing Digital Camera Patent Litig.*, 778 F.3d 1255, 1261 (Fed. Cir. 2015) (citing *O2 Micro*, 521 F.3d at 1359); *see Taction Tech., Inc. v. Apple, Inc.*, 686 F. Supp. 3d 995, 1016, 1019-25 (S.D. Cal. 2023) (re-construing claims based on new construction arguments presented by the parties at summary judgment). The parties genuinely dispute the meaning of the preamble, so the court will revisit claim construction.

When construing claims, “words of a claim are generally given their ordinary and customary meaning,” which “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (citations and internal quotation marks omitted). The court begins by considering the “words of the claims themselves” as they “provide substantial guidance as to

the meaning of particular claim terms.” *Cont’l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 796 (Fed. Cir. 2019) (quoting *Phillips*, 415 F.3d at 1314). The court also considers the specification, which “is the single best guide to the meaning of a disputed term,” and the prosecution history, which, “like the specification, . . . provides evidence of how the PTO and the inventor understood the patent.” *Id.* However, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* (quoting *Phillips*, 415 F.3d at 1317). Additionally, “the district court in its sound discretion [may] admit and use” extrinsic evidence, including expert and inventor testimony, dictionaries, and learned treatises, to help determine the meaning of claim terms. *Phillips*, 415 F.3d at 1317-19. But the Federal Circuit has extensively cautioned that extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms,” and it is therefore “unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19.

The preamble in full states “[a]n armoring panel for resisting edge impacts by ballistic projectiles.” LTC Mot. Ex. 3 at col. 1, ll. 21-23. As the court has already left the preamble in its unaltered form once, it is apparent that the terms standing alone are not a sufficient construction. However, the court notes that individual terms should be viewed in context to understand their meaning, *Phillips*, 415 F.3d at 1314, so no term will be considered in isolation.

Turning to the specification, neither LTC nor MV2 takes a supported position. LTC’s argument that “given that armor panels resist ballistic impacts, that the edges of armor panels are part of the armor panel, and that MV2 has admitted its accused products are armor panels, no reasonable juror could find that MV2’s panels are not ‘armoring panel[s] for resisting edge impact

penetrations by ballistic projectiles,” LTC Mot. at 7, reads “resisting” out of its context directly abutting “edge impact penetrations” and ignores the core goal of its invention as described by the specification. As stated, the specification explains that known armoring panels’ effectiveness for resisting impacts from ballistic projectiles was significantly lower for impacts occurring at or near the edge of a panel than for impacts occurring closer to its center. LTC Mot. Ex. 2 at col. 1, ll. 23-33. The invention “solves or ameliorates the problem . . . discussed . . . [and] enhances or preserves the ability of an armoring panel to suppress projectile penetrations from bullets which impact at or near the panel’s edge.” *Id.* at col. 1, ll. 34-36, col. 2, ll. 34-37. Moreover, every element of the invention is targeted at increasing a standard armoring panel’s capacity to resist edge impacts. *See id.* at col. 2, ll. 2-6, 23-28, 32-34, 63-65 (describing advantages of the invention). These statements compel the conclusion that an infringing armoring panel must at least be able to resist edge impacts to a level greater than the general resistance of any armoring panel. LTC’s invention is targeted at solving a particular problem arising from edge impacts in known armoring panels, and this purpose is a limitation on the invention. A structure that still contains the defect LTC claims to have remedied does not meet that limitation.

On the other hand, MV2 contends that “resist” “means *preventing complete penetrations at the edge.*” MV2 Mot. at 14. For support, it relies primarily on testimony from the ‘598 patent’s inventors and its expert witness, Mr. Maher. *See* Opp’n to Mot. to Exclude Maher Ex. B ¶¶ 70-82, ECF 294-2 (“Maher Report”) (expert opinion on the meaning of the preamble). But the intrinsic evidence is always more significant than any extrinsic evidence, and extrinsic evidence that conflicts with “the claims themselves, the written description, and the prosecution history,” should be discounted. *Phillips*, 415 F.3d at 1318 (quoting *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998)). The specification does not specifically describe the extent to which a

panel practicing the invention will be able to resist edge impact penetrations except by comparison to the main body of the panel or a panel that does not contain the invention. Moreover, the specification uses the terms “suppress” and “resist” interchangeably, *see, e.g.*, LTC Mot. Ex. 2 at col. 1, ll. 31-33, 43-49; *id.* at col. 2, ll. 20-22, 29-37, and distinguishes a panel’s ability to “suppress” penetration from its ability to “prevent” the same, *id.* at col. 1, ll. 31-33. The specification therefore suggests that resistance or suppression of penetrations means something different and less absolute than prevention.¹²

Turning to what “resisting” *does* mean, the court holds that LTC’s patented edge protection should function to resist edge impact penetrations at a level similar to the main body of the panel’s resistance to penetrations of non-edge impacts. This interpretation gives effect to the invention’s stated goal of “solv[ing] or ameliorat[ing] the problem[]” of reduced suppression capabilities at the edge of known armoring panels, *see id.* at col. 1, ll. 23-42, without attempting to quantify the value “with greater precision than the claim language warrants,” *U.S. Philips Corp. v. Iwasaki Elec. Co. Ltd.*, 505 F.3d 1371, 1377 (Fed. Cir. 2007). The specification supports this conclusion, and explains that the inventive concept “enhances or preserves the ability of an armoring panel to suppress projectile penetrations from bullets which impact at or near the panel’s edge.” LTC Mot. Ex. 2 at col. 2, ll. 34-37. The preamble goes on to aver that “the delamination resisting tie sections

¹² MV2’s expert also offers interpretations of the terms “edge impacts” and “ballistic projectiles” from the preamble, although MV2 does not assert them in its motion. *See* Maher Report ¶¶ 78, 80-81. His opinion that “edge impacts” must mean an “impact point . . . within one diameter of the projectile striking it from the edge” is offered with no support at all and finds none in the specification. *See id.* ¶ 78. His assertion that “ballistic projectiles” must refer to a “particular ballistic projectile” is similarly at odds with the specification. *See id.* ¶ 81. Thus, the court will not rely on Mr. Maher’s opinions to the extent they would be admissible on the issue of claim construction. *Phillips*, 415 F.3d at 1318 (“conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court”); *see Horizon Pharma, Inc. v. Dr. Reddy’s Labs. Inc.*, 839 F. App’x 500, 505 (Fed. Cir. 2021).

. . . of the outer and inner durable sheets allow the armoring panel to resist penetrations by bullets which strike at or near the panel's lateral edge *equally* with the panel's suppression of more medially striking bullets.” *Id.* at col. 4, l. 65-col. 5, l. 2 (emphasis added); *see also id.* at col. 5, ll. 12-17 (“. . . the panel's edge strike bullet suppression capability may be *equalized* with the panel's mid-panel strike suppression capability . . .”) (emphasis added). *But see id.* col. 4, ll. 56-57 (“The instant invention *lessens or ameliorates* such heightened penetration threat at panel edges . . .”) (emphasis added). Through these descriptions, the specification gives meaning to the preamble term “resisting.”¹³

Moreover, defining “resisting” by way of comparison to another measurable (and presumably known) value is appropriate. Read in context, “resisting,” like “reduced,” is a “term . . . of degree, as it necessarily calls for a comparison against some baseline.” *Liberty Ammunition, Inc. v. United States*, 835 F.3d 1388, 1395 (Fed. Cir. 2016). To be sufficiently definite, a patent need not define a term of degree by “a precise numerical measurement,” *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1335 (Fed. Cir. 2010), *overruled on other grounds by Nautilus Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014), so long as the claim using the term of degree “‘provide[s] objective boundaries for those of skill in the art’ when read in light of the specification and prosecution history.” *Liberty Ammunition*, 835 F.3d at 1396 (quoting *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370-71 (Fed. Cir. 2014)). The Federal Circuit has consistently upheld general measurement language in the claims of a patent where the specification provides a reasonable basis for determining an appropriate or covered value. *See Enzo*, 599 F.3d at 1332 (quoting *Seattle Box Co., Inc. v. Indus. Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir.

¹³ This conclusion means that MV2's proposed construction is not absolutely incorrect; if the medial section of the panel consistently prevents penetrations, then an infringing edge system must do approximately the same for edge impacts.

1984)). For example, in *Natural Alternatives International, Inc. v. Creative Compounds, LLC*, the Federal Circuit approved the patentability of claims that provided for dosage of an “effective” amount, holding that “the Method Claims . . . contain a dosage limitation by virtue of the ‘effective’ limitation” because “the specification provides a method for calculating dosage based on a subject’s weight.” 918 F.3d 1338, 1346 (Fed. Cir. 2019). Here, the specification similarly provides a method of determining the requisite level of resistance; that of the main body of the armoring panel to which the edge protection is added. *See* LTC Mot. Ex. 2 at col. 4, l. 65-col. 5, l. 2.

C. Application

With the construction disputes resolved, the court now turns to the second step of the infringement analysis: comparing “the properly construed claims . . . to the allegedly infringing device.” *Sound View Innovations, LLC v. Hulu, LLC*, 33 F.4th 1326, 1335 (Fed. Cir. 2022) (quoting *CommScope Techs. LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1295 (Fed. Cir. 2021)). LTC argues that MV2’s panels literally infringe its patent. LTC Mot. at 4. “Literal infringement requires the patentee to prove that the accused device contains each limitation of the asserted claim(s).” *Bayer AG v. Elan Pharm. Rsch. Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000) (citing *Mas-Hamilton Grp. v. LaGard, Inc.*, 156 F.3d 1206, 1211 (Fed. Cir. 1998)). “If any claim limitation is absent from the accused device, there is no literal infringement as a matter of law.” *Id.* MV2 cross-moves for summary judgment of non-infringement, contending that, on the evidence in the record, “no reasonable jury could find infringement.” *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1429 (Fed. Cir. 2000) (citing *Voice Techs. Grp., Inc. v. VMC Sys., Inc.*, 164 F.3d 605, 612 (Fed. Cir. 1999)). The patentee bears the burden of proving infringement by a preponderance of the evidence. *Bayer AG*, 212 F.3d at 1247 (citing *Insituform Techs., Inc. v. Cat Contracting, Inc.*, 161 F.3d 688, 692 (Fed. Cir. 1998)).

LTC argues, as it must, that MV2's panels contain each limitation of amended claim 7. *See* LTC Mot. at 4-19. MV2 responds with targeted attacks on the sufficiency of LTC's evidence showing that its panels contain the "resisting" limitation from the preamble, the same limitation as it appears in the court's construction of the term "first durable sheet," and the limitation that "the lengths of the durable sheets' outer and inner oppositely lateral extensions are at least one inch." MV2 Mot. at 8-21. In the event that its motion for summary judgment fails, MV2 further argues that disputes of fact preclude summary judgment for LTC. *Id.* at 28-29.

In the briefing, LTC stakes nearly everything on its argument that the "resisting" phrase of the preamble is not a limitation and that, if it is, it should be interpreted broadly. *See* LTC Mot. at 7-10, 19-24. The court has rejected these arguments. LTC's asserted evidence that could relate to the properly construed "resisting" limitation consists of an email statement from MV2's co-owner, Keith Harrison, that the accused edge protection "technically . . . helps add ballistic protection." LTC Mot. at 7-8 (quoting LTC Mot. Ex. 26, ECF 281-26).¹⁴ Harrison's email discussed a "fiberglass U-channel" that MV2 placed "around the perimeter of [its] panels." LTC Mot. Ex. 26 at 2. He explained that the channel "protects the edges and really helps with local delamination on the corners of the panels[,] adds a lot of durability and lifespan to a panel, and helps it survive the

¹⁴ LTC lists five reasons that the resisting limitation is met, but four of those reasons merely repackage a logic-based argument following from LTC's capacious definition of "resisting." *See* LTC Mot. at 7-8 (reasoning that, sequentially: (1) "[j]ust as the edges of a table are part of a table, the edges of MV2's armor panel are part of the panel—and they offer at least some resistance"; (2) "given that armor panels resist ballistic impacts, that the edges of armor panels are part of the armor panel, and that MV2 has admitted its accused products are armor panels, no reasonable juror could find that MV2's panels are not 'armoring panel[s] for resisting edge impact penetrations by ballistic projectiles"; (4) "MV2 has admitted that its *panels* provide at least some resistance, which is all claim 7 requires" (emphasis added); and (5) "MV2's *armor panels* for Freeport are 'ballistic armor' panels and ballistic testing confirms they are for resisting, and do resist, impact penetrations.")). None of these points relates to heightened resistance to *edge impacts* as opposed to the panels' general resistance capability.

wear and tear that these panels see.” *Id.* Additionally, Harrison stated that “[t]echnically it helps add ballistic protection further out towards the edge of the armor panel, as it adds some support to the edge of the armor panel—helps hold it in place upon impact and limits the movement or bending of the edge when the projectile hits.” *Id.* With reference to the added ballistic protection, Harrison specifically acknowledged that “LTC has a patent on this feature (which is total BS)” and agreed that “it does work a little.” *Id.* LTC reads this email as an “admission” that confirms that MV2’s panels satisfy the “resisting” limitation in the preamble.

MV2 argues that Harrison’s email does not constitute a “statement of fact” because he “had no basis in any testing, or actual evidence, to make his statement, [rendering it], at best, a questionable statement of opinion.” MV2 Mot. at 16. Harrison’s email is essentially an extrajudicial admission of fact; it is a “statement[] made by a party outside the context of the litigation that [is] introduced into evidence by that party’s opponent.” *Frolow v. Wilson Sporting Goods Co.*, 710 F.3d 1303, 1310 (Fed. Cir. 2013) (citing *Martha Graham Sch. & Dance Found., Inc. v. Martha Graham Ctr. of Contemporary Dance, Inc.*, 380 F.3d 624, 644 (2d Cir. 2004)). The Federal Circuit generally treats such “admissions” as “evidence that may be countered by the party that made the admission[; they] are not ‘binding,’ and ‘may be controverted or explained by the party’ that made the statement.” *Id.* (quoting 30B Michael H. Graham, *Federal Practice and Procedure* § 7026 (interim ed. 2006)). Accordingly, Harrison’s statement is evidence that MV2’s panels do resist edge impact penetrations, and MV2’s competency arguments go to the evidence’s weight. Conversely, Harrison’s statement does not constitute a binding admission that MV2’s panels contain the resisting limitation.

Even construing Harrison’s statement in the light most favorable to LTC, it is insufficient to create a genuine dispute regarding whether MV2’s panels contain the resisting limitation as

construed by the court. *See id.* (noting that whether an extrajudicial admission “in view of the record as a whole, raises a genuine issue of material fact, will depend on the facts of each case”). Harrison did not suggest that the edge impact resistance MV2’s panels offer was a notable feature such that a jury could infer that the level of edge impact resistance is similar to that of the rest of the panel’s resistance to medial impacts. Instead, although he admitted that the U-channel did offer some resistance to ballistic edge impacts, he consistently belittled its effectiveness. Harrison stated that the U-channel “[t]echnically . . . helps add ballistic protection . . . [by] add[ing] *some* support . . . [that] does work *a little*.” LTC Mot. Ex. 26 at 2. Harrison did note that the U-channel “really helps with local delamination on the corners of the panels,” *id.*; *see* LTC Mot. Ex. 7 at 210:4-17, ECF 281-7, which is the process the ‘598 patent claims creates the resisting feature, *see, e.g.*, LTC Mot. Ex. 2 at col. 1, ll. 34-49 (describing the panel’s “delamination resisting tie sections” and ability to “cancel delaminating forces”). But Harrison apparently did not discern any conflict between this statement and his later minimization of the increase in resistance capacity. Read as a whole, Harrison’s statement offers little to support the conclusion that MV2’s U-channel addition increased its panels’ edge-impact resistance to a level similar to its medial-impact resistance. In other words, it does not create a genuine dispute of material fact.¹⁵

¹⁵ LTC also cites a second email from Harrison which offers even less support. LTC Mot. Ex. 10, ECF 281-10. There, in response to manufacturing questions, Harrison stated that the U-channel “is intended to slide over the edge of a composite panel to add protection, stiffness, and durability to the panel/edge.” *Id.* at 3. In addition to offering no quantification of the level of “protection,” which Harrison testified did refer to “ballistic protection,” *see* LTC Mot. Ex. 7 at 151:3-8, MV2 points out that these emails relate to a “pultrusion”-manufactured product, *see* MV2 Mot. at 15; LTC Mot. Ex. 10 at 4 (“project . . . will need a pultruded E-glass fabric edge trim around all the panels”), which differs from the structure covered by the ‘598 patent, which is formed by heating the structure and pressing it. *See* LTC Mot. at 3 (describing pressing process). A lack of resistance quantification also dooms LTC’s citation to another of Harrison’s emails. LTC Mot. Ex. 52, ECF 281-52.

Notably, LTC does not cite the expert report from Dr. Cardi in its summary judgment briefing to support its argument that MV2's panels embody the "resisting" limitation. Nevertheless, a review of Dr. Cardi's report discloses several opinions that MV2's panels do resist edge-impact penetrations. Dr. Cardi opines that an MV2 document describing its edge trim as "provid[ing] additional panel stiffness" proves that the edge trim "helps resist stratum delamination as outlined in the '598 patent, which helps contribute to improved ballistic impact resistance near the edge of the panel." Cardi Report ¶¶ 66-67. Dr. Cardi also concludes that "MV2's edge trim would help resist delamination of the intermediate ballistic layers (stratums), which would resist edge impact penetrations by ballistic projectiles," based on a review of ballistic testing results and high-speed videos of LTC panels that he says are "of similar composition and geometry to MV2's accused panels." *Id.* ¶¶ 76, 173, 175-179. Dr. Cardi notes that "MV2's fiberglass edge trim is thinner than LTC's," but contends that "the claims in the '598 patent do not require optimal resistance of edge impact penetrations." *Id.* ¶ 113.

Dr. Cardi's opinions fail to create a genuine dispute of material fact for the same reason as Harrison's email: Dr. Cardi does not describe the extent to which MV2's panels would resist edge impact penetrations. Dr. Cardi's opinion that MV2's edge trim would "help contribute to improved ballistic impact resistance" because it "provides additional panel stiffness," *id.* ¶¶ 66-67, 70, never quantifies the extent to which the edge trim would "help." Inferring an infringing level of resistance from Dr. Cardi's vague "stiffness"-based opinion is made all the more untenable by the substantial record evidence from all three of the patent's inventors that a panel could become "too stiff [such that it] doesn't allow the material to delaminate . . . [and] could cause a projectile to go straight through it." MV2 Reply Ex. 2 at 82:12-83:2, ECF 315-2; *see* Maher Report ¶ 168 (quoting Deposition of John Bockbrader at 182:12-21 as stating that "[t]here are cases where you would

install edge protection and you would actually degrade the armor protection around the perimeter, because you have too much stiffness behind the armor panel, and it doesn't allow the panel to react the way it should be"); *id.* ¶ 184 (quoting Deposition of Mike Coltrane at 259:10-261:21 to same effect). Furthermore, Dr. Cardi's opinions that are based on the performance of LTC's panel pre-assume the answer to the ultimate question. Dr. Cardi reasons that, because (in his opinion) MV2's panels include the same structural features as LTC's, they must perform the same way. But whether MV2's panels include those structural features *and* perform similarly are both independent questions for which LTC bears the burden of proof. One cannot prove the other.

The parties contest whether ballistic testing of edge impacts on an accused panel is necessary to demonstrate resistance at a level sufficient to prove infringement. MV2 Mot. at 10-12, 18, 27; LTC Reply at 5, 7-8, ECF 304. The court offers no opinion on the issue because LTC's evidence is insufficient under any standard.

LTC has not introduced evidence sufficient to create a genuine dispute of material fact regarding whether MV2's panels resist edge impact penetrations at a level similar to the main body of the panel's resistance to penetrations of non-edge impacts. Accordingly, MV2's motion for summary judgment of non-infringement will be granted, and LTC's motion for summary judgment of infringement will be denied. The court does not consider MV2's additional arguments in support of non-infringement.

II. Willful Infringement

Willful infringement requires proof that "the accused infringer had a specific intent to infringe at the time of the challenged conduct." *Bayer Healthcare LLC v. Baxalta Inc.*, 989 F.3d 964, 987 (Fed. Cir. 2021) (citing *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 579 U.S. 93, 105-06

(2016)). Of course, a defendant who has not infringed also cannot have done so willfully. LTC's motion for summary judgment of willful infringement will be denied.¹⁶

III. Patent Misuse

Patent misuse is an affirmative defense that “an accused infringer may invoke . . . to defeat the patentee's claim.” *Princo Corp. v. Int'l Trade Comm'n*, 616 F.3d 1318, 1328 (Fed. Cir. 2010) (internal citations omitted). The defense is no longer relevant in light of the court's ruling of non-infringement. Accordingly, LTC's motion for summary judgment that it did not commit patent misuse will be denied as moot.

IV. Exclude Experts

The parties filed cross-motions to exclude each other's expert witness. *See* Mot. to Exclude Dr. Cardi, ECF 278; Mot. to Exclude Mr. Maher, ECF 280. Although the court considered both expert reports in analyzing the cross-motions for summary judgment, it did not rely on either expert's opinions as support for its conclusions. Because the court will grant MV2's motion for summary judgment of non-infringement, no claims remain. Accordingly, both motions to exclude will be denied as moot.

V. Amend Answer

MV2 filed a motion to amend its answer to add a new affirmative defense. Mot. to Amend, ECF 285. The court will grant MV2's motion for summary judgment of non-infringement, so no further defenses are necessary. The motion to amend will therefore be denied as moot.

¹⁶ To the extent it remains live, LTC's claim of Active Inducement of Infringement, *see* Compl. ¶¶ 130-153, will also be denied because it is premised on MV2's orders from manufacturers, internal product development efforts, and sales to customers concerning panels that do not infringe according to this Memorandum. For the same reason that a lack of infringement dooms willfulness, so too goes active inducement.

VI. Motions to Seal

Also pending are motions to seal several of the parties' motions and exhibits. *See* ECFs 279, 283, 288, 291, 292, 295, 296, 302, 306, 308, 311, 313, 316. Neither party has opposed any of the other's motions to seal. Upon review, the court finds good cause for sealing the designated materials, *see* Stipulated Protective Order, ECF 30, and the motions to seal will be granted.

VII. Costs and Fees

In its Answer, MV2 requested an award of costs and fees if it prevailed. If it wishes to do so, MV2 may file a motion for attorney fees and non-taxable costs pursuant to 35 U.S.C. § 285 consistent with the timelines set forth in Local Rule 109. In deciding any motion for costs and fees, the court will consider all the facts of this litigation when exercising its discretion to determine whether this case has been "exceptional." *See OneSubsea IP UK Ltd. v. FMC Techs., Inc.*, 68 F.4th 1285, 1294 (Fed. Cir. 2023) (citing *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 572 U.S. 559, 564 (2014)).

CONCLUSION

For the above-stated reasons, MV2's motion for summary judgment of non-infringement will be **GRANTED**. LTC's motion for summary judgment of infringement and willful infringement will be **DENIED**. LTC's remaining claim for active inducement will be **DISMISSED**. Both parties' motions to exclude expert witness testimony and MV2's motion to amend its answer will be **DENIED AS MOOT**. Both parties' motions to seal will be **GRANTED**.

Because this Memorandum may involve discussion of information designated Confidential and/or Attorneys' Eyes Only by the parties throughout this litigation, and the court has found good cause to seal such information, this Memorandum will be issued under seal, with the condition that it will be fully unsealed in 45 days unless either party shows good cause for specific redactions to

the Memorandum. The parties are directed to confer and submit any proposed redactions to the court within 30 days of this Memorandum and Order. The court finds, after considering less restrictive alternatives, that this course adequately balances the interests at issue under *Virginia Department of State Police v. Washington Post*, 386 F.3d 567 (4th Cir. 2004).

A separate order follows.

5/30/2024
Date

/s/
Catherine C. Blake
United States District Judge